

Episode: Fire in the Land of the Longleaf Pine

EXPLORING NORTH CAROLINA

Life in the Hot Seat

STANDARD COURSE OF STUDY CORRELATIONS:

Biology, Goal 4: The learner will develop an understanding of the unity and diversity of life.

4.03 Assess, describe and explain adaptations affecting survival and reproductive success.

Biology, Goal 5: The learner will develop an understanding of the ecological relationships among organisms.

5.01 Investigate and analyze interrelationships among organisms, populations, communities and ecosystems.

5.03 Assess human population and its impact on local ecosystems and global environments.



MATERIALS

Photos of longleaf pine forests on fire or ravaged by fire. For a nice sequence of before and after photos, visit http://www.learnnc.org/lp/editions/cede_longleaf/496.

Student assignment sheets
Posterboard (or 11"x17" paper for mini-poster)

Colored markers

Magazines for cutting out pictures/photos of wildlife and plants related to longleaf pine ecosystems

PREPARATION

Fact sheets on many species found in longleaf pine ecosystems can be downloaded from the N.C. Museum of Natural Sciences' Nature Notebook Web site, <http://www.naturalsciences.org/funstuff/notebook/index.html> and the N.C. Wildlife Resources Commission's North Carolina Wildlife Profiles Web page, http://www.ncwildlife.org/pg10_outdoorKids/pg10d_8.htm. Profiled species include fox squirrel, black bear, Carolina anole and wild turkey.

INTRODUCTION TO LESSON: Students will use what they learn about the fire adaptations of the longleaf pine forest to produce an "autobiography" of a longleaf pine and create a poster that illustrates its life cycle and role in the ecosystem.

BACKGROUND FOR TEACHER: All necessary information for main activity is provided in the video. *Additional Resources* provides support material.

engage > Show a photo of a charred longleaf pine forest. Ask students what they think happened and if fire is ever a good thing. Tell them they will learn about how fire is necessary for the survival of some forests and then create an "autobiography" of a longleaf pine." [Show Chapters 1 and 3 of the video.](#)

explore > Divide students into groups and hand out assignment sheets. Tell them they are to produce an illustrated "autobiography" of a longleaf pine in poster form. Using first person point-of-view, the group should tell the story of the tree from seed stage to grass stage to mature tree. Encourage them to be creative in their approach –the poster might look like a family album, excerpts from a diary, or even an obituary.

explain > Have students present their posters to the rest of the class.

elaborate > Ask students to choose one of the following activities to further explore fire-adapted ecosystems.

- Produce an autobiography of another plant or animal of the longleaf pine ecosystem, e.g., wiregrass, red-cockaded woodpecker, turkey oak, Venus flytrap or pitcher plant.
- Investigate other fire-adapted ecosystems, such as Yellowstone National Park, and describe your findings in written or visual format.
- Investigate this question: Are all forests fire-adapted? Describe your findings in written or visual format.

Or choose an activity from the Longleaf Alliance (see *Additional Resources*).

evaluate > Use the rubric to assess the posters.

poster rubric: autobiography

	Poor (1 pt)	Fair (2 pts)	Good (3 pts)	Outstanding (4 pts)
ORGANIZATION	Poster contains written information, but is not organized.	Poster has much information, but format is not easily understood.	Poster is organized in clear, easily understood format.	Poster is organized in clear, easily understood format. Headings are clear and appropriate.
ACCURACY	Information on poster is completely inaccurate. No sources are cited.	Some information is accurate; sources missing or incomplete.	Information is generally detailed and accurate. Sources are accurately cited.	Poster contains completely accurate and detailed information from a variety of accurate, properly cited sources.
SCIENCE APPLICATION: <i>Fire ecology</i>	Poster does not mention fire or fire adaptations of the tree.	Some fire adaptations are present, but not well explained.	Information on poster shows good understanding of tree's fire adaptations.	Fire adaptations thoroughly explained and connected to whole ecosystem.
CREATIVITY	Poster contains the bare minimum; no creativity or care is evident.	Poster is neat, but shows no original ideas.	Poster is neat and colorful, with work displayed in original manner.	Information is displayed clearly in an original and individual manner.
EFFORT & PARTICIPATION	Student(s) rarely on task (two or more reminders needed).	Student(s) usually on task (one to two reminders needed).	Student(s) always on task.	Student(s) always on task and actively encouraged others.

Teacher's Notes:



BEYOND THE CLASSROOM

Arrange a field trip to Weymouth Woods Sandhills

Nature Preserve (<http://www.ncparks.gov/Visit/parks/wewomain.php>) or Carolina Beach State Park (<http://www.ncparks.gov/Visit/parks/cabe/ecology.php>).

Additional Resources:

North Carolina Wild Places: A Closer Look. 1993. N.C. Wildlife Resources Commission: Division of Conservation Education. Raleigh, N.C. Chapter 5: Sandhills Longleaf Pine Forest and Longleaf Pine Savannah and Pocosin.

Articles from the collection

"Nature's Ways: Natural History Essays from Wildlife in North Carolina." Lawrence S. Earley. (Available for purchase from N.C. Wildlife Resources Commission, <http://www.ncwildlife.org>, 1-866-WILDSHOP)

- From volume IV: *Temporary Arrangements* contrasts differences between loblolly and longleaf pine with respect to role in succession.
 - From volume V: *The Long Story of Conifers* describes specific adaptations of North Carolina's conifers.
 - From volume VI: *The Fiery Story of Wiregrass* describes adaptations that allow this plant to survive fire and/or drought.

- **Longleaf Alliance** • http://www.auburn.edu/academic/forestry_wildlife/longleafalliance/
 - Click on "Information for educators" and then "Teacher/kid's guide" to find some great activities

The Nature Conservancy's Global Fire Initiative • <http://www.tncfire.org/> • Describes ways to combat fire-related biodiversity threats due to altered fire regimes.

Assignment

Autobiography of a Longleaf Pine



In this assignment, you will produce an “autobiography” of a longleaf pine tree. Imagine that you are a longleaf pine living in a forest in southeastern North Carolina. Tell the world about your life from “baby” (seed) to “child” (grass stage) to “adult” (mature tree). In your autobiography, be sure to describe the world you live in:

- ✳ How do you get what you need to survive?
- ✳ Who are your neighbors?
- ✳ What kinds of events happen in your forest?
- ✳ In what ways have you survived hard times?

Present your autobiography as a poster. The poster might look like a family album, excerpts from a diary, or even an obituary.

Use your creativity—but make sure your facts are accurate!

REQUIRED ELEMENTS:

- ✳ Poster
- ✳ Written descriptions of life cycle and longleaf pine ecosystem (The story must include an encounter with fire and an explanation of how the tree is adapted to it.)
- ✳ Pictures (minimum of three)
- ✳ List of sources used